

Application No. 10/009,021

Our Case No. 09793822-0158

REMARKS

Claims 9-18, 29-35, 37-38, 49-53 and 56-61 are pending and under consideration. Claim 9 has been amended to overcome the rejections based on 35 U.S.C. 102, 103 and 112. Claims 16 and 36 have been canceled to overcome an objection under 37 CFR 1.75. Claims 15, 35, 49, 58 and 61 have been amended to correct informalities. Claims 29 and 49 have been amended to claim the subject matter disclosed in paragraphs [0048] - [0051] of the present application. No new matter has been added.

Claims 9, 29 and 49 and the claims dependent therefrom were rejected under 35 USC § 112 because it allegedly was unclear if the Markush group was limited to the list or to all the formulas shown. The claims have been amended in order to match the list with the formulas, and it is submitted that the rejection is now moot in light of the amendment.

Claims 17-18 and 37-38 were rejected because nm is not a unit of frequency. The claims have been amended to show that nm is a unit of wavelength, and it is submitted that the rejection is now moot in light of the amendment.

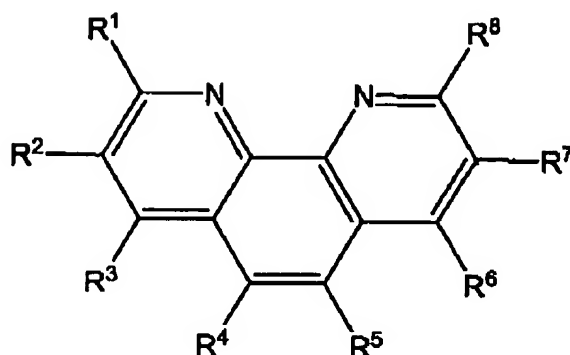
Claims 9 and 56-57 were rejected under 35 USC § 102(b) as being anticipated by EP 0954205. In particular, reference was made to examples 2, 3, 5 and 6 of EP 0954205 as containing a molecule of structure 15-1 of the instant claims. Claim 9 as presently amended does not claim an electroluminescent element comprising a molecule of structure 15-1. Accordingly, the rejection is moot in view of the amendment.

Claims 9-13, 29-33, 49-53 and 59-60 were rejected under 35 USC § 102(e) over US 6,525,212. In particular, reference was made to US 6,525,212 disclosing a molecule of structure 15-1 of the instant claims. Claim 9 as presently amended does not claim an electroluminescent element comprising a molecule of structure 15-1, and the rejection is therefore moot with respect to said claim.

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blocking layer comprises one or more phenanthroline compounds of the following formula:



wherein R^1 to R^8 are independently selected from hydrogen, alkyl, aryl, amino, halogen, cyano and hydroxyl.

As disclosed in paragraphs [0048] - [0051] of the present application, the hole blocking layer should be one which promotes the recombination of holes and electrons in the luminescent layer, thereby efficiently emitting light with high luminance. The material suitable for such a hole blocking layer should preferably be one which features the highest occupied molecular orbital at a lower energy level than the highest occupied molecular orbital level of the material forming the layer in contact with the anode of the hole blocking layer. Also, the lowest unoccupied molecular orbital level of the material forming the hole blocking layer should be at a higher energy level than the lowest unoccupied molecular orbital level of the material forming the layer in contact with the anode of the hole blocking layer, and should also be at a lower energy level than the lowest unoccupied molecular orbital level of material forming the layer in contact with the cathode of the hole blocking layer.

Materials characterized by such molecular orbitals include the above phenanthrolines. US 6,525,212 does not disclose hole blocking layers with the above phenanthrolines. Accordingly, claims 29-33 and 49-53 as presently amended are not anticipated by the cited reference, and the rejection should be removed.

Claims 9-13, 29-33, 35, 49-53 and 56-60 were rejected under 35 USC 103(a) as unpatentable over EP 0967834. In particular, reference was made to a distyryl

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compound disclosed therein that is a position isomer of compound 17-1 of the present application. Claim 9 as presently amended does not claim an electroluminescent element comprising a molecule of structure 17-1, and the rejection is therefore moot with respect to said claim.

As regards claims 29 and 49, it is respectfully submitted that EP 0967834 does not disclose hole blocking layers with the above phenanthrolines. Accordingly, claims 29-33 and 49-53 as presently amended are not unpatentable in light of the cited reference, and the rejection should be removed.

Claims 9, 29, 34, 37-38, 58 and 61 were rejected under 35 USC 103(a) as being unpatentable over EP 0967834 in view of US 5,281,489. In particular, reference was made to distyryl compound disclosed therein that is a position isomer of compound 17-1 of the present application. Claim 9 as presently amended does not claim an electroluminescent element comprising a molecule of structure 17-1, and the rejection is therefore moot with respect to said claim.

As regards claim 29, it is respectfully submitted that the rejection is now moot in view of the present amendment, as neither EP 0967834 nor US 5,281,489 discloses hole blocking layers with the above phenanthrolines. Accordingly, claims 29 as presently amended is not unpatentable in light of the cited reference, and the rejection should be removed.

Claims 9-13 and 56 were rejected under the judicially created doctrine of obviousness-type double patenting as being not patentably distinct from the subject matter of claims 1-8 of the commonly owned US 6,265,088. Although applicants disagree, attached hereto is a terminal disclaimer in compliance with 37 CFR 1.321(c) in order to overcome the rejection.

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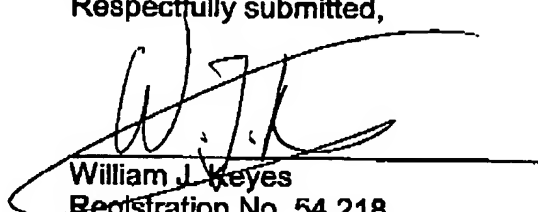
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In view of the reasons set forth above, passage to allowance and early notice thereof is respectfully requested and earnestly solicited.

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Respectfully submitted,



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